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U. S. DEPARTMENT OF AGRICULTURE.
BUREAU OF PLANT INDUSTRY—BULLETIN NO. 148.
B. T. GALLOWAY, *Chief of Bureau.*

SEEDS AND PLANTS IMPORTED

DURING THE PERIOD FROM JULY 1 TO SEPTEMBER 30, 1908:

INVENTORY No. 16; Nos. 23323 TO 23744.

ISSUED APRIL 10, 1909.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1909.

BULLETINS OF THE BUREAU OF PLANT INDUSTRY.

The scientific and technical publications of the Bureau of Plant Industry, which was organized July 1, 1901, are issued in a single series of bulletins, a list of which follows.

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[Continued on page 3 of cover.]

U. S. DEPARTMENT OF AGRICULTURE.
BUREAU OF PLANT INDUSTRY—BULLETIN NO. 148.
B. T. GALLOWAY, *Chief of Bureau.*

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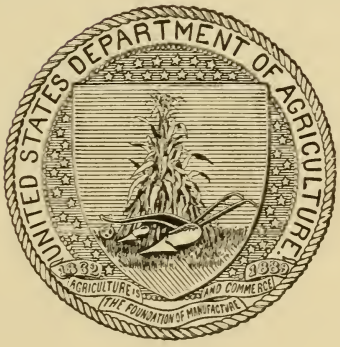

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1909.

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LETTER OF TRANSMITTAL.

U. S. Department of Agriculture,
Bureau of Plant Industry,
Office of the Chief,
Washingon, D. C., January 15, 1909.

Sir: I have the honor to transmit herewith and to recommend for publication as Bulletin No. 148 of the series of this Bureau, the accompanying manuscript, entitled "Seeds and Plants Imported During the Period from July 1 to September 30, 1908: Inventory No. 16; Nos. 23323 to 23744."

This manuscript has been submitted by the Agricultural Explorer in Charge of Foreign Seed and Plant Introduction with a view to publication.

Respectfully,

B. T. Galloway,
Chief of Bureau.

Hon. James Wilson,
Secretary of Agriculture.

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SEEDS AND PLANTS IMPORTED DURING THE PERIOD FROM JULY 1 TO SEPTEMBER 30, 1908: INVENTORY NO. 16; NOS. 23323 TO 23744.

INTRODUCTORY STATEMENT.

This inventory of seeds and plants imported is the sixteenth in a series which was begun in 1898. It contains the introductions of only three months, and as the three months happened to fall at a time when our agricultural explorer Mr. Frank N. Meyer was in this country preparing for further explorations and Prof. N. E. Hansen was on his way to Central Asia or preparing there to collect the seeds of wild alfalfas on the steppes, the number of plants imported is small. It represents, therefore, only those things which have been secured by correspondence with our agents and friends in different parts of the world.

Through a correspondent in Chile, Mr. José D. Husbands, an unusual collection of seventy-two potato varieties was secured, among which are wild types from the archipelago of Chiloé and the adjoining mainland of Chile. These, it is hoped, will prove of considerable value for the breeders of this important crop. The unusual interest in the Peruvian strains of alfalfa induced us to get, through Mr. T. F. Sedgwick, of Lima, a collection of ten reputed different strains, while Mr. M. Fraile, of this Bureau, brought from near his home in Villares de la Reina, Spain, plants of a wild form of alfalfa which is of especial interest to the experts on this crop. The unusual activity of the office in the introduction of the timber bamboos of the world has brought in the rare and especially frost and drought resistant form *Dendrocalamus strictus* from India, and another, a tropical species, *Chusquea bambusaeoides*, which is said to seed regularly, from Rio de Janeiro, Brazil. Mr. W. S. Lyon, of Manila, has sent a remarkable ornamental squash that looks promising for greenhouse culture; Mrs. L. E. M. Kelly has sent five varieties of the Chinese leitchee from the island of Hainan, the home of this new fruit, and through the kindness of Dr. John M. Swan, of Canton, a Wardian-case shipment of grafted leitchees was sent from Canton to the Hawaiian Islands. The seeds of a number of named varieties of Japanese chrysanthemums will interest the crysanthemum growers; the seed of a honey-scented collarette dahlia will attract the growers of this flower; the introduction of *Viola calcarata* may lead to an improvement in the

ordinary pansy, and plants of *Rosa moyesi*, a distinct Chinese form, may be of value for the rose breeders. Our unusual collection of bananas has been enriched by twelve varieties from Ceylon, and a new mango of some promise from Brazil has been added to the mango collection.

It may be well to repeat what has been explained in previous inventories, that the appearance of a name and description in this bulletin does not indicate surely that the seeds or plants are available at once for the use of experimenters. The majority of this plant material has to be sent out as soon as possible after it arrives, much of it to experts at the State agricultural experiment stations who are waiting for it, and the rest to our propagating gardens, where it will be taken care of until the young plants are large enough to send out by mail to those particularly interested. An eligible list is kept and applications from private or official experimenters who feel that they are in a position to give any of the introductions a careful trial are welcomed. The more specific the application the more attention it will receive from this office, for the main object of the work is to encourage careful trials with the purpose of building up new plant industries. Whenever an experimenter thinks he sees a definite use for any one of the thousands of plants which are being imported it is the aim of the Office of Foreign Seed and Plant Introduction to put the living seeds or plants desired in his hands. As far as the limited facilities of the office permit, we will therefore agree to hunt up and get plant material of an experimental character, provided it is not listed in the seed or nursery catalogues of this country, and will place it in the hands of experimenters who can satisfy us of their ability to use it intelligently.

As it is of great importance that a historical record be kept of the success or failure of the many introductions, it is especially requested that whenever an experimenter makes a success of the plants sent him, and particularly if he publishes anything about them, he will notify the office and publish the office number, which is invariably sent out with every plant or package of seed, or, if the number is lost, he will at least give the date when the seed was sent him, so that through the accurate records which are kept the source of the seeds can be traced. It should also be remembered that a report of failure, while negative evidence, is often of very considerable value.

David Fairchild,
Agricultural Explorer in Charge.

Office of Foreign Seed and Plant Introduction,
Washington, D. C., January 15, 1909.

INVENTORY.

23323. PHRAGMITES VULGARIS (Lam.) Hitchcock (ARUNDO VULGARIS Lam.).

From Gothenburg, Sweden. Procured by Hon. W. Henry Robertson, American consul. Received July 6, 1908.

"These roots were procured for comparison with American-grown reeds in the study of the reed-lath matting industry proposed by Mr. Ivar Tidestrom." (*Fairchild.*)

23324. CARICA PAPAYA L. **Papaw.**

From Miami, Fla. Received through Mr. P. J. Wester, Subtropical Laboratory and Garden, July 6, 1908.

"A variety of papaw with cucumber-shaped fruits peculiarly well suited for packing. Grown at the Subtropical Laboratory under No. 516 from seed presented by Mr. Cephas Pinder, Upper Matecumbie Key. Pulp is rather thin, but the flavor is excellent. The flower is perfect and the variety appears worth testing and, if possibe, improving on the thickness of the pulp." (*Webster.*)

23325 to 23332.

From Canton, Kwangtung, China. Presented by Dr. W. H. Dobson. Received July 6, 1908.

The following seeds. Varietal descriptions by Mr. H. T. Nielsen.

23325 to 23327. GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

23325. Black.

23326. Yellowish green.

23327. Yellowish green, smaller seeded than No. 23326.

23328. VIGNA SESQUIPEDALIS (L.) W. F. Wight.

23329 and 23330. DOLICHOS LABLAB L. **Hyacinth or Bonavist bean.**

23329. White.

23330. Red.

23331. PISUM ARVENSE L. **Field pea.**

23332. CAJAN INDICUM Spreng.

23333. ANDROPOGON SORGHUM (L.) Brot.

From northwestern Rhodesia. Presented by Mr. C. E. F. Allen, Conservator of Forests, Livingstone, Victoria Falls, northwestern Rhodesia. Received July 8, 1908.

Martwa. "The seeds are small, broadly obovate, somewhat flattened, flinty, pearly white with pale hulls, closely resembling some forms of *Ampemby* from Madagascar." (*Carleton R. Ball.*)

23334 and 23335.

From Grand Rapids, Mich. Presented by Mr. V. A. Wallin, Wallin Leather Company, through Mr. Frederic Chisolm. Received July 1 and 9, 1908.

Seeds of the following:

23334. CAESALPINIA BREVIFOLIA (Clos) Baill. **Algarobilla.**

Procured from an importing firm in the United States.

"A leguminous shrub or small tree the pods of which are extraordinarily rich in tannic acid, the content being as high as 67 to 68½ per cent. Tanning with these pods is accomplished in one-third of the time required for tanning leather from oak bark, and the pods are especially valuable as giving a bloom to the leather. They also furnish a yellow age." (*Extract from von Mueller.*)

23335. CAESALPINIA CORIARIA (Jacq.) Willd. **Cascalote.**

From the south of Mexico.

"A leguminous tree from the wet seashores of Central America. Each tree is said to produce annually 100 pounds of pods, the husks of which, commercially known as divi-divi, are regarded in India as the most powerful and quick-acting tanning material. The market price of the pods is from $40 to $65 per ton, and England imports about 4,000 tons annually. In India lac is also gathered from this tree." (*Extract from von Mueller.*)

23336 to 23339.

From Shanghai, Kiangsu, China. Presented by Dr. S. P. Barchet, interpreter, American Consulate. Received June 26 and July 7, 1908.

The following seeds:

23336 to 23338. GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

23336. *Barchet.* Identical with No. 20798.

23337. *Riceland.* Identical with No. 20797.

23338. *Meyer* (?). Mottled brown. Probably identical with No. 17852.

23339. ORYZA SATIVA L. **Rice.**

23340. LEUCAENA GLAUCA (L.) Benth. **Necklace seed.**

From Hayden Bridge, England. Presented by Mr. Robert Dodd, Back Row. Received June 27, 1908.

"These seeds are used for making necklaces." (*Safford.*)

23343 and 23344. DIPTEROCARPUS spp.

From Saigon, Cochin China. Presented by Mr. J. E. Conner, American consul. Received July 9, 1908.

23343. DIPTEROCARPUS ALATUS Roxb.

"This is one of the most beautiful trees for street planting and ornamentation that can be found. It is tall, straight as an arrow, has no limbs near the ground, and is both graceful and majestic in appearance. It will grow within thirty years to a height of 100 feet or more, and at maturity attains a much greater height. An avenue of these trees gives the impression of an avenue of royal palms, for the trunks are straight and columnar and present a rather smooth, rounded surface of gray bark reaching far overhead to the beginning of the fan-shaped periphery of limbs and leaves. It is a native of Cochin China only, but has been transplanted to Mexico. The soil is a black alluvial deposit, not too wet." (*Conner.*)

23344. DIPTEROCARPUS INTRICATUS Dyer.

23345 to 23347.

From China. Presented by Rev. J. M. W. Farnham, Chinese Tract Society, Shanghai, China. Received July 9, 1908.

The following seeds:

23345. FRAGARIA INDICA Andrews. **Strawberry.**

From Mokanshan, China. "Seed of a wild strawberry. Tasteless." (*Farnham.*)

23346. RUBUS sp. **Raspberry.**

"Wild red raspberry found growing 1,600 feet above sea level on the mountain not far from Hangchow, China. A pleasant acid, but not much of the raspberry flavor. Used for eating raw, as jam, and makes a good jelly. A true raspberry." (*Farnham.*)

23347. RUBUS sp.

"A wild red berry, resembling the blackberry except in color. Slightly acid." (*Farnham.*)

23348 to 23352.

From China. Received through Mr. Frank N. Meyer, agricultural explorer, in the spring of 1907.

The following plants and seeds:

23348. OPHIOPOGON JAPONICUS (L.) Ker.

From Tanghsi, China. "(No. 232a, Mar. 1, 1906.) A grasslike plant which may be useful as an edge plant in shady places, as it grows in such locations: bears nice blue berries." (*Meyer.*)

23349. POA PRATENSIS L.

From Kaiyuan, Manchuria. "(No. 595, Jan. 15, 1907.) A strange grass found growing on the city wall of Kaiyuan. Seems to be able to withstand droughts and neglect remarkably well. Will probably be found to be a very valuable lawn grass." (*Meyer.*)

23350. (Undetermined.) **Sedge.**

From Kaiyuan, Manchuria. "(No. 596, Jan. 15, 1907.) A very slender leaved sedge found growing on the city wall of Kaiyuan, where it is subjected to great extremes in temperature and to much drought. Will probably be found of great use in small gardens in the arid regions as a lawn sedge." (*Meyer.*)

23351. (Undetermined.) **Sedge.**

From Kaiyuan, Manchuria. "(No. 597, Jan. 15, 1907.) A medium slender leaved sedge found growing on the city wall of Kaiyuan. Will be found well fitted for a lawn sedge in the arid regions of the United States. It is probably the same species as that sent from Peking in 1905 under No. 70 (S. P. I. No. 17466)." (*Meyer.*)

23352. (Undetermined.) **Sedge.**

"A very coarse species of low-growing sedge found on the city wall of Kaiyuan. Seems to thrive better in the shady places than when fully exposed to the sun. For this reason it may be of use as a lawn sedge underneath trees. May also be fit as a fodder plant in dry, cold places." (*Meyer.*)

23353 and 23354.

Presented by Miss Jane Lewis, 1721 West Genesee street, Syracuse, N. Y., through Mr. J. R. Robinson, of the Department of Agriculture. Received July 14, 1908.

Seed of each of the following:

23353. BIGNONIA UNGUIS-CATI L.

From Canary Islands. "Seeds of a climber with a lovely yellow flower. They, I believe, will be slow in sprouting." (*Lewis.*)

23353 and 23354—Continued.

23354. GERBERA JAMESONI Bolus. **Barberton daisy.**

From Durban, South Africa. Procured from the curator of the Botanic Gardens. "The flowers are a beautiful shade of red." (*Lewis.*)

23355 to 23363. ANDROPOGON SORGHUM (L.) Brot. **Kafir.**

From Vereeniging, Transvaal, South Africa; original seed from Natal. Presented by Prof. J. Burtt Davy, agrostologist and botanist, Transvaal Department of Agriculture. Received July 21, 1908.

Seed of each of the following. Varietal descriptions by Mr. Carleton R. Ball.

23355. White. Extra long heavy head; seed large, white, slightly flattened; glumes greenish white.

23356. White. Small head as in our domestic varieties; seeds and glumes very similar.

23357. White kafir form. Slender head; white kafir seed, but the greenish white glumes are longer than in a true white kafir.

23358. Medium-sized head; spikelet rather small; glumes reddish to black, about as an orange sorgo; seeds varying from white tinged with red to orange.

23359. Similar to No. 23358, but seeds averaging paler.

23360. Medium kafir head; small orange seeds and greenish glumes tinged with red.

23361. Similar to No. 23360, but glumes frequently a deep red.

23362. Medium kafir head; tinged red seeds and pale glumes.

23363. Medium kafir head, but with deep reddish brown seeds and deep red glumes; strongly resembles a deep red *Orange* or *Colman* sorgo and may prove to be sweet.

23364 to 23366. LITCHI CHINENSIS Sonner. **Leitchee.**

From Canton, Kwangtung, China. Procured by Dr. John M. Swan, medical superintendent, the Medical Missionary Society's Hospital. Received at the Hawaii Agricultural Experiment Station June 6, 1908.

Trees of each of the following:

23364. *Kwai mi.* "A delicious flavored and very popular leitchee. It comes in the fifth lunar month (July). Earliest variety." (*Swan.*)

23365. *Hak ip.* "The black-leaf leitchee; this is a favorite early sort, having a small seed, and is tender and very juicy. It ripens in the fifth lunar month (July), and we count it our best variety. The tree is grafted by the approach system." (*Swan.*)

23366. *Neu mai chi.* "This is the largest fruited and smallest seeded and sweetest leitchee in Canton, and is one of the best. It sells for 10 cents a caddy (about 4 cents a pound), double the price of the ordinary sorts. It ripens in the fifth and sixth lunar months (July and August)." (*Swan.*)

"Leitchees like a rich, clayey soil and must not be allowed to suffer from drought." (*Frank N. Meyer.*)

23367 to 23378.

From Paramaribo, Surinam. Presented by Mr. J. R. Wigman, director of the Botanic Garden. Received July 24, 1908.

Cuttings of each of the following:

23367. CITRUS LIMONUM Risso. **Lemon.**

From Saramacca district.

23367 to 23378—Continued.

23368. CITRUS NOBILIS Lour. **Mandarin.**

From Groningen Station.

23369. CITRUS AURANTIUM L. **Orange.**

From Voorburg estate.

23370. CITRUS AURANTIUM L. **Orange.**

From Groningen Station.

23371. CITRUS DECUMANA (L.) Murr.

"*Curacaosche alamoen.*"

"We consider these trees just as good or in some respects even better than many well-known standard varieties." (*Wigman.*)

23372 to 23378. MANIHOT spp. **Cassava.**

23372.

"*Kankantrie tikie.*"

23373.

"*Kabocgrocoeman.*"

23374.

"*Bocroe tikie.*"

23375.

"*Affie tikie.*"

23376.

"*Pina pina.*"

23377.

"*Ingi bitawan.*"

23378.

"*Bita.*"

"The above yield the largest quantity of starch of any of the Surinam varieties." (*Wigman.*)

23379 and 23380. CARICA PAPAYA L. **Papaw.**

From Ancon, Canal Zone, Panama. Presented by Mr. H. F. Schultz, through Mr. Frederic Chisolm. Received July 21, 1908.

Seed of each of the following:

23379. "Superior variety; large fruit, solid yellow meat; spicy; obovate form; prolific bearer; mother tree at Ancon, Canal Zone." (*Schultz.*)

23380. "Very best variety, producing medium-sized to large fruit; color of meat a golden yellow; flavor excellent, very aromatic; shape of fruit pyriform. Seed obtained from Culebra, Canal Zone." (*Schultz.*)

23381 to 23386.

From Piracicaba, Sao Paulo, Brazil. Presented by Dr. J. William Hart, director, Agricultural College, through Mr. C. V. Piper. Received July 23, 1908.

23381. MELINIS MINUTIFLORA Beauv. **Molasses grass.**

"*Catingueira soxa.* This is the more valuable sort." (*Hart.*)

23382. ANDROPOGON HALEPENSIS (L.) Brot. **Johnson grass.**

"This stock does not spread by means of roots." (*Hart.*)

23381 to 23386—Continued.

23383 and 23384. "Seed of two coarse-growing forage grasses." (*Hart.*)

23383. Panicum sp.

"*Capim milhã branca de Itapira.*"

23384. Panicum sp.

"*Capim Guine.*"

23385. PANICUM MAXIMUM Jacq. **Guinea grass.**

"*Capim colonia.* This is a rank grower and makes a quantity of hay that all classes of stock eat eagerly. In our alfalfa field it is the most persistent 'weed' that we have to contend with. Usually it is in flower every time the alfalfa is cut, and the combination beats timothy and clover." (*Hart.*)

23386. MARANTA ARUNDINACEA L. (?) **Arrowroot.**

"This is much superior to the common arrowroot we have been growing; is very large and easier to dig on account of its bulbs being near the surface. It might be of some value where the common Bermuda arrowroot flourishes." (*Hart.*)

23390. TRICHOLAENA ROSEA Nees.

From Piracicaba, Sao Paulo, Brazil. Presented by Dr. J. William Hart, director, Agricultural College, through Mr. C. V. Piper. Received July 27, 1908.

"*Favorite* grass. A very fine hay grass. It does not grow in clumps like so many of our grasses, and may prove a good lawn grass for the South." (*Hart.*)

23391 and 23392.

From Spain. Received through Mr. M. Fraile, of this Department, July 28, 1908.

23391. MEDICAGO SATIVA L. **Alfalfa.**

"These roots of 'Mielga' were only sent to show the size, and were taken from the roadside near the village of Villares de la Reina. This plant remains green through drought, while other small vegetation withers away." (*Fraile.*)

"The name 'Mielga' is never applied to the cultivated form of alfalfa, but only to the wild form. Some seedsmen also apply it to *Medicago sativa varia.*

"The plants lack the upright habit of cultivated alfalfa, and are viewed very much as weeds are in this country. Frequently it is quite difficult to eradicate them from fields in which they have become established. The roots sometimes acquire a diameter of an inch or more." (*Brand.*)

23392. AMYGDALUS COMMUNIS L. **Almond.**

"Cuttings of seedling hard-shelled almonds from along the railway track near Bobadilla. These trees were planted by the railroad company, and extend from Bobadilla 50 miles northward. They are now (1908) 13 years old and are bearing fruit. This is the most colossal seedling orchard of these seedling hard-shelled almonds in the world, and the late-flowering varieties are worthy of being picked out and propagated." (*Fairchild.*)

23393. SOLANUM JAMESII Torr.

From Santa Fe, N. Mex. Presented by Mr. M. J. Nagle, through Mr. R. A. Oakley. Received July 18, 1908.

See Nos. 10473 and 18342 for previous introductions.

23395. LITCHI CHINENSIS Sonner. **Leitchee.**

From Nodoa, island of Hainan, South China. Presented by Mrs. L. E. M. Kelly, Hoihow, island of Hainan, South China, via Hongkong. Received August 1, 1908.

23395—Continued.

"This shipment contains five different varieties of leitchees. The seeds were taken from selected fruits of the most delicious kinds and have been dried in the shade, as the Chinese say they will never grow if dried in the hot sun. In planting, the seeds must be barely covered with finely pulverized earth and watered freely." (*Kelly.*)

23416. PITHECOLOBIUM DULCE (Roxb.) Benth.

From Tamaulipas, Mexico. Presented by Mr. Clarence A. Miller, American consul at Matamoros, through Mr. E. C. Green, in charge of the South Texas Garden, Brownsville, Tex., at the request of Mr. Frederic Chisolm. Received August 3, 1908.

"A plant used for tanning purposes. These seeds were secured from a small tree growing in the State of Tamaulipas, Mexico. The trees occur occasionally through the northern part of that State." (*Green.*)

23417 to 23422. ANDROPOGON SORGHUM (L.) Brot. **Sorghum.**

From Natal, South Africa. Presented by Miss Caroline E. Frost, Umzumbe Mission Station. Received August 1, 1908.

The following seeds. Varietal descriptions by Mr. Carleton R. Ball.

23417. **Kafir.**

"*Ibele climhlope.* Tall, bears well, eaten by birds more than other kinds." (*Frost.*)

Very slender head near *Blackhull* kafir, but spikelets smaller and grain has pinkish tinge.

23418. **Kafir.**

"*Ibele elifupi.* A favorite variety among Zulus because it is short and easy to handle." (*Frost.*)

A large heavy head near *Red* kafir, but glumes are greenish white and seeds pale red.

23419. **Sorgo (?).**

"*Ihlosa.* Tall; eaten by birds." (*Frost.*)

A loose, open, medium-sized head with slender branches; rachis extending only halfway through; glumes mostly shining black, and obovate seeds of a pinkish tinge. Pith discolored.

23420. **Sorgo (?).**

"*Njiba.* Tall, rather bitter; larger seeds than other varieties; not eaten by birds." (*Frost.*)

Short, oval head; rachis 1 inch long; branches stout at crest; glumes short, mostly greenish white; obovate, pale red seeds; resembles our *sumac-milo* hybrid.

23421. **Kafir.**

"Apparently the same as the second variety (S. P. I. No. 23418)." (*Frost.*)

Small, slender head; greenish glumes and large obovate pink seeds.

23422.

"*Coolie corn.* This grows larger and taller than any of the other varieties, eaten by birds." (*Frost.*)

Probably not native to Natal, a form of Hackel's variety *roxburghii*, to which *shallu* belongs. Characterized by long, loose head; long slender branches; slender, acute, greenish to red glumes, spreading apart and becoming involute at maturity, completely exposing the flattened, oval, white seed, which shatters readily; strongly awned; almost identical with some *mpembys*.

23423 and 23424. PHOENIX spp.

From Nice, France. Presented by Dr. A. Robertson Proschowsky. Received July 27, 1908.

23423 and 23424—Continued.

23423. PHOENIX CANARIENSIS Chabaud. (?)

"This beautiful palm, considered by Prof. U. Dammer, of Berlin, a distinct species (I could not find out origin), produces fairly good dates and will, I think, interest Mr. Swingle, who has asked me for seed of my different Phoenix with eatable fruits for hybridization purposes." (*Proschowsky.*)

23424. PHOENIX RECLINATA Jacq. (?)

"Stem short; leaves 2-ranked, bright green, obliquely arcuate-recurved toward the apex; leaflets rigid, 12 inches long, 1 inch wide, lanceolate, acuminate, the lowest spinescent." (*Bailey.*)

23425 to 23431.

From Rio de Janeiro, South America. Presented by Dr. Wenceslão Bello, president of the National Society of Agriculture. Received July 31, 1908.

The following plants:

23425. CHUSQUEA BAMBUSAEOIDES (Raddi) Hackl. (?)

"*Taquarussú.* A kind of bamboo bearing abundant seed and occurring in the neighborhood of Rio." (*Bello.*)

23426. MANGIFERA INDICA L. Mango.

"*Itamaracá.* A small yellow mango with thin skin, without fiber, and of very delicate flavor, bringing a high price on the market. Occurs in Pernambuco." (*Bello.*)

23427. PLATONIA INSIGNIS Mart.

"*Bacopari.* This fruit is slightly acid, has a white pulp, and is probably a wild form." (*Bello.*)

23428. MYRCIARIA EDULIS (Vell.) Skeels (EUGENIA EDULIS Vell.).

"*Cambucá.* A very large tree with fruit the size of an apple, of yellow color, much more delicate than the guava." (*Bello.*)

23429 to 23431. MYRCIARIA CAULIFLORA (Mart.) Berg.

"*Jaboticaba.* Bears a small black fruit about the size of a plum, of a delicious flavor." (*Bello.*)

23429. Var. *coroa.* **23431.** Var. *paulista.*

23430. Var. *murta.*

23432 to 23435.

From Jamaica Plain, Mass. Presented by Prof. C. S. Sargent, of the Arnold Arboretum. Received at the Subtropical Laboratory and Garden, Miami, Fla., August 4, 1908.

The following plants:

23432. OROXYLON FLAVUM Rhed.

A tree, with light brown bark. Flowers clear sulphur yellow, appearing in spring.

"This species will probably be suited to the climate of the Southern States and of southern California, and will be a desirable ornamental tree on account of its large pinnate foliage and handsome yellow flowers." (*Rheder.*)

23433. DORYANTHES PALMERI W. Hill.

"An amaryllus-like herb. Flowers red, in an oblong, branched raceme, 3 feet long, stem and bracts the same rich color as the flowers. A native of Queensland, Australia." (*Bentham, Flora Australiensis.*)

23434. SCHEFFLERA sp. (?)

23435. FICUS PANDURATA Hance.

"A low diffuse bush, with large broad leaves, from southern China." (*Annals of Calcutta Botanic Gardens, 1887–88.*)

"It is of use as a greenhouse ornamental, and as such has been known to reach a height of 14 feet." (*Young.*)

23436. COLCHICUM AUTUMNALE L. **Meadow saffron.**

From York, England. Purchased from J. Backhouse & Son (Limited) for Dr. R. H. True's experiments. Received August 11, 1908.

"A low, perennial, bulbous plant, native in moist meadow lands in middle and southern Europe. The corms and seeds are used in preparing the extract and wine of colchicum and the alkaloid colchicin and its salts, employed in the treatment of gout.

"Cultivated as an ornamental. Flowers in autumn.

"This plant possesses very active properties, a small portion of the root or seeds taken internally being sufficient to cause poisoning." (*True.*)

23437. GLADIOLUS spp. **Gladiolus.**

From Pretoria, South Africa. Presented by Prof. J. Burtt Davy. Received August 7, 1908.

"Corms of our native gladioli. There is more than one species represented in this collection." (*Davy.*)

23438 to 23446.

From Bagdad, Turkey. Procured by Mr. William C. Magelssen, American consul. Received August 11, 1908.

The following seeds:

23438. PHOENIX DACTYLIFERA L. Date.

Ascherasi.

23439 to 23446. ZIZYPHUS JUJUBA (L.) Lam. "Nabuk."

23439.	*Ascherasi.*	23443.	*Khadrawi.*
23440.	*Khastawi.*	23444.	*Zeytouni.*
23441.	*Zehdi.*	23445.	*Jozi.*
23442.	*Berben.*	23446.	*Taberzal.*

"The foliage of the Nabuk tree appears to be equally luxuriant on all varieties, and there is no choice so far as their growth is concerned. The fruit differs slightly in taste and quality; it is eaten by the poorer classes of Mohammedans and Jews. I am informed that the natives make it a practice to soak the seed in rose water before planting, claiming that this tends to increase the beauty of the tree and the flavor of the fruit. The Nabuk is certainly the finest shade tree grown in these parts, and I judge from the scant care given it that the tree must be an exceptionally hardy one." (*Magelssen.*)

23449. AMYGDALUS PERSICA L. **Peach.**

From Pretoria, Transvaal. Presented by Mr. R. A. Davis, government horticulturist, Transvaal Department of Agriculture. Received August 13, 1908.

"These seeds are from a natural variety, *St. Helena*, or *Transvaal Yellow*, always coming true. As a fruit, they are a good cling canner, but otherwise useless. As a stock, they are unequaled for wet, dry, rocky, or loamy soil; will germinate and fruit in two years if thrown from a railway carriage window into a rocky crevice. I think it should be very useful in California." (*Davis.*)

23450. AGATHIS AUSTRALIS (Lamb.) Steud. **Kauri pine.**

From Auckland, New Zealand. Presented by Mr. D. Petrie. Received August 13, 1908.

"This magnificent tree measures, under favorable circumstances, 180 feet in height and exceptionally 17 feet in diameter of stem, the estimated, but perhaps overrated, age of such a tree being 700 to 800 years. It furnishes an excellent, remarkably durable timber, straight grained, and much in use for

23450—Continued.

masts, boats, superior furniture, casks, and rims of sieves, and it is particularly sought for decks of ships, lasting for the latter purpose twice as long as the deal of many other pines. It is also available for railway brake blocks and for carriages, and is regarded as one of the most durable among timbers of the Coniferæ. * * * This tree yields, besides, the Kauri resin of commerce. * * * The varnish made of it is almost colorless." (*Extract from von Mueller.*)

23451. ARISTOTELIA MACQUI L'Herit. **"Maqui."**

From Santa Ines, Chile. Procured from Salvador Izquierdo. Received August 18, 1908.

"Seed of the Chilean shrub which is so much used for giving color to pale wines. The color is extracted from the berries or seeds by trituration, maceration, and, finally, decantation." (*Izquierdo.*) (See also No. 19113 for further description.)

23452. RUBUS SPECTABILIS Pursh. **Salmon berry.**

From Sitka, Alaska. Received through Prof. C. C. Georgeson, special agent in charge, Agricultural Experiment Station, August 18, 1908.

"The salmon berry of Oregon, California, and New Mexico. Closely allied to *R. nutkanus*, but the stem is nearly evergreen, and ramification persistent and prickly. Fruit large, red, yellow, or salmon colored, raspberry-like. Mr. L. Burbank records that the stems will reach a height of 20 feet and occasionally a foot in diameter. Fruit larger than any raspberry, but not so well tasted. Crop always abundant. Fruit ripe when other raspberries are only in bloom. [Prof. Meehan.] Requires moist, sandy land. Promising for hybridization." (*Von Mueller.*)

23453. VOANDZEIA SUBTERRANEA (L.) Thouars. **Woandsu.**

From Pretoria, Transvaal, South Africa. Presented by Prof. J. Burtt Davy, Transvaal Department of Agriculture. Received August 7, 1908.

"African groundnut, African ground pea, woandsu, and erroneously goober pea.

"Native of Madagascar, Comoro Island, and various parts of Africa as far south as Natal. A plant very much resembling the peanut, but containing only one seed in each pod. These pods ripen under the ground in the same manner as peanuts. The plant is smaller, and in most cases not so prolific in seed as the best varieties of peanuts. These are used in about the same manner as peanuts both for human food and as feed for animals. In California the woandsu has yielded nearly as heavily as the best varieties of peanuts, but at most other places the yield has been less." (*C. V. Piper.*)

23455. ZIZYPHUS SATIVA Gaertn. **Chinese date.**

From Beaufort, S. C. Purchased from Mr. A. P. Prioleau, through Mr. Frederic Chisolm, for stocks. Received August 20, 1908.

"This fruit, commonly called jujube, is very pleasant eaten raw, and is largely used in the Southern States in making jujube paste and similar confectionery. The fruits are dried by the Chinese, and in that condition taste somewhat between a raisin and a dried date." (*Chisolm.*)

23456. (Undetermined.)

From Nodoa, island of Hainan, South China. Presented by Mrs. J. Franklin Kelly, Hoikow, island of Hainan, South China. Received August 29, 1908.

"Seed of the 'yellow-skin' (*Iu Foe*), a fruit the size of a large marble, yellow skin when ripe, with a tart, delicious flavor. It makes a nice, cooling drink and lovely jam, a little like gooseberry in flavor. It grows on a pretty, symmetrical tree." (*Kelly.*)

23457. PITHECOLOBIUM DULCE (Roxb.) Benth. **Guamuchitl.**

From Ixtlan del Rio, Tepic, Mexico. Presented by Sr. Alfredo Lonergan, through Mr. Frederic Chisolm. Received August 11, 1908.

"A thorny leguminous tree known in Mexico as guamuchitl, or huamuchitl; the sweetish pulp of the pods is universally eaten by the natives, while the bark of the tree is used in tanning leather. Has succeeded at Miami, Fla." (*Chisolm.*)

23458 to 23467. MEDICAGO SATIVA L. **Alfalfa.**

From Peru. Procured by Mr. T. F. Sedgwick from Antonio Cantelli Y Hno, Lima, Peru, for Mr. C. V. Piper. Received August 19, 1908.

23458. *Barranca.*
23459. *Conchapilca.*
23460. *Pueblo Nueva.*
23461. *Cochahuiaico.*
23462. *Omas.*
23463. *Monsefu.*
23464. *San Pedro.*
23465. *Acos.*
23466. *Supe.*
23467. *Sayan.*

23468 and 23469.

From Salamanca, Spain. Secured by Mr. Manuel Fraile, of this Department. Received August 24, 1908.

23468. MEDICAGO SATIVA L. **Alfalfa.**

Roots from plants growing beside road between Salamanca and Villares de la Reina, Spain. (See No. 23391 for further remarks.)

23469. AMYGDALUS COMMUNIS L. **Almond.**

Hard-shelled sweet variety. From a tree 30 years old growing in a garden in Villamayor, Salamanca, Spain.

23471 to 23473.

From Cochin China. Presented by Hon. Jacob E. Conner, consul. Received August 25, 1908.

The following seeds:

23471. AVERRHOA BILIMBI L. **Cucumber tree.**

"Flowers red in larger racemes than *A. carambola;* fruit smaller than carambola, cucumber shaped, smooth, green rind, and acid pulp. Extensively cultivated in South America." (*L. H. Bailey.*)

23472. PHYLLANTHUS ACIDA (L.) Skeels (AVERRHOA ACIDA L.). **Otaheite gooseberry.**

"Shrub, with ovate acute leaflets; flowers on separate branches below the foliage; fruit fleshy, edible. India and Madagascar. W. Harris, of Hope Gardens, Jamaica, West Indies, writes that the Otaheite gooseberry is an elegant shrub or small tree, often cultivated in gardens in the lowlands of Jamaica and the West Indies. The fruit is very acid and astringent; the root is an active purgative, and the seed is also cathartic. The fruit is occasionally pickled or made into preserves. Plants are raised from seeds." (*L. H. Bailey.*)

23473. AVERRHOA CARAMBOLA L.

From tree growing in Mr. Conner's garden. "The fruit is quite juicy, piquant, and agreeable. As the plant can stand slight frost it ought to succeed in southern Florida. The fruit is well worthy of introduction." (*Conner.*)

23474. Illipe latifolia (Roxb.) F. Muell. **Mahwah.**

From Baroda, India. Presented by M. A. Sitole, Director of Agriculture, Baroda State, India, through Mr. O. W. Barrett. Received August 20, 1908.

"A tree, growing 50 feet high, content with dry, stony ground, enduring slight frost. Wood so tough as to be adapted for plows and various machinery [Dr. Schlich]. The succulent corolla affords a never-failing crop of nourishing saccharine food to the rural inhabitants. Each tree supplies 2 to 3 hundredweight; each hundredweight yields on distillation about 3 gallons of spirits; essential oil is also obtained from the corolla. The flowers are also used for feeding cattle; they will keep for a long time. The seeds yield oil of thick consistence." (*Von Mueller.*)

23475. Paspalum dilatatum Poir. **Large water grass.**

From Coffs Harbor, New South Wales, Australia. Purchased from Mr. W. Seccombe, through Mr. C. V. Piper. Received August 22, 1908.

23476. Dendrocalamus strictus (Roxb.) Nees. **Bamboo.**

From British India. Presented by Mr. Jean Houzeau de Lehaie, Saint Symphorien, Belgium. Received August 26, 1908.

"One of the most valuable bamboos; is not hurt by slight frosts and, it is said, is very drought resistant. Wood of the finest quality.

"I hope that this valuable species, designated by Sir D. Brandis as the most important for the Southwest of the United States, has now been introduced in sufficient quantity so that a distribution may be made for outdoor planting. I think that in order to be successful the young plants ought not to be planted outdoors until the spring of 1910, unless it is under exceptionally favorable conditions, and that in any case it will be necessary to irrigate or water them, to fertilize them, and to keep them covered with straw the first summer after they are planted out. It will of course be only the most vigorous and well rooted plants which will show all their power of resistance and all their good qualities." (*De Lehaie.*) (See Nos. 21548 and 22819 for previous importations.)

23477. Vitis vinifera L. **Grape.**

From Aberdeen, Cape Colony, South Africa. Presented by Mr. F. W. Eagle, at the request of Mr. R. A. Davis, government horticulturist, Transvaal Department of Agriculture. Received August 29, 1908.

Karroo Belle. "This grape is a really good table fruit, possessed of hardy qualities and largely resistant in this country to *oidium;* it would be quite at home in the Santa Clara Valley, and also, I think, farther south, even in Fresno." (*Davis.*)

"I have succeeded in rearing a cross between the vines *White Crystal* and *Muscat Hambro*, which I have named *Karroo Belle.* A magnificent grape, strong grower, enormous cropper, very large and most compact bunches (some cut this season weighed from 5 to 7½ pounds), round and very large, almost stoneless berries, which are a dark brownish purple where well exposed to the sun, but where hanging in the shade are only slightly tinted, or even quite green if very much shaded, and always with a great deal of bloom. Carries exceptionally well, as proved by a box of grapes sent to Johannesburg containing eight varieties, among which were *Hannepoot, Crystal Muscat Hambro, Uitenhage Blue*, etc., all of which were useless except *Karroo Belle*, bunches of which were perfect. As regards keeping qualities, we cut the first ripe bunch off the parent vine on January 15, and the last one on June 28, which were perfectly sound except a few berries stung by the bees through the bag, so that we have been cutting grapes from the one vine for nearly five and a half months." (*Mr. Eagle, Aberdeen, Cape Colony, in the Transvaal Agricultural Journal, January, 1907, p. 472.*)

"This variety of grape has been planted largely in different districts of the Transvaal. The vine arrived with a flattering reputation, but has, unfortunately, proved in the majority of cases quite worthless, owing to the fact that

23477—Continued.

it bore no fruit. The writer in the course of his journeys through the country has only found two of the kind which ever gave signs of a crop, one of which has been grown by Mr. J. G. Beverley, of Zeerust. This particular vine has at present (in its third year) 59 bunches of grapes well formed and set and in perfectly healthy condition. It would appear, therefore, that this grape, one of the few varieties originated in South Africa, will under certain circumstances do exceedingly well." (*Extract from the Transvaal Agricultural Journal, January, 1907, p. 471.*)

23481. MEDICAGO SATIVA VARIA (Mart.) Urb. **Alfalfa.**

From Hamburg, Germany. Purchased from R. Liefman Sons, Successors, through Mr. I. L. Radwaner, 533 East 149th street, New York. Received August 31, 1908.

Sand lucern.

23482. VICIA VILLOSA Roth. **Hairy vetch.**

From Svalof, Sweden. Purchased from the Allmanna Svenska Utsadesaktiebolaget, through Dr. Albert Mann, at the request of Mr. A. D. Shamel. Received July, 1908.

To be used by Mr. A. D. Shamel, at Hockanum, Conn., as a cover crop in his tobacco experiments.

23483. DAHLIA sp. **Dahlia.**

From Erfurt, Germany. Purchased from Mr. T. C. Schmidt. Received September 3, 1908.

"Variety *coronata*. This Mexican sort is to be regarded as a forerunner of quite a new class and certainly worth consideration, especially as the flowers have a pleasant honey-like scent, which up to the present no other dahlia has. The habit and growth of the plants are somewhat different from the other known dahlia sorts, because they first nearly fully develop and then bring up the enormously long flower stems, so that the flowers are from 20 to 28 inches freely above the foliage. The whole plant reaches a height of about 4½ feet, blooms abundantly, and one can easily cut flowers with stems 24 to 30 inches long, which makes this sort valuable for large bouquets, especially as the cut flowers keep in water several days.

"The color of the flowers is a brilliant and bright scarlet, the form that of the single dahlias, only the separate leaves are bent somewhat inward, and besides that the flowers close in the evening, assuming thereby the form of a crown. The raising from seed is not at all difficult. By sowing in May the plants bloom in July and August." (*Schmidt.*)

23485 and 23486.

From Stockholm, Sweden. Presented by Dr. Veil Wittrock, director, Botanic Garden. Received August, 1908.

Seed of each of the following:

23485. VICIA KOKANICA Reg. & Schmal.

"A perennial species occurring in the mountains of Kokan near Woruch, Naubid, and in the passes of Basmandinsk (Turkestan)." (*O. Fedtschenko, in Fedtschenko's Journey in Turkestan, vol. 3.*)

23486. PHLEUM PRATENSE NODOSUM (L.) Halacsy.

23487. PHALARIS COERULESCENS Desf.

From Melbourne, Australia. Presented by Mr. Alfred Henry, Office of Titles, Queen street, through Mr. C. V. Piper. Received August, 1908.

See No. 22961 for description.

23488. ANDROPOGON HALEPENSIS (L.) Brot. **Johnson grass.**

From Brazil. Presented by Mr. H. M. Lane, president, Mackenzie College, Sao Paulo, Brazil, through Mr. C. V. Piper. Received August 24, 1908.

"This seed was procured from a seedsman and is probably from one of the northern States of Brazil. It does not grow here (Sao Paulo)." (*Lane.*)

23489 to 23493.

From Cordoba, Spain. Received through Mr. Manuel Fraile, of this Department, September 4, 1908.

23489. PUNICA GRANATUM L. **Pomegranate.**

Sweet.

23490. PUNICA GRANATUM L. **Pomegranate.**

Sour.

23491. AMYGDALUS COMMUNIS L. **Almond.**

Sweet.

23492. AMYGDALUS COMMUNIS L. **Almond.**

Bitter.

"These almonds are said to flower in April and May, but as the region from which they come is a rather cool one they probably should not be regarded as late-flowering varieties." (*Fraile.*)

23493. CROCUS SATIVUS L. **Saffron.**

23494. CUCURBITA PEPO L. **Squash.**

From Philippine Islands. Presented by Mr. W. S. Lyon, Manila, P. I. Received August 26, 1908.

"*Calabaza.* This plant was found growing on a house in a barrio of a small town on the shores of the Laguna de Bay, Luzon. The leaves are not unusual in shape, but the center of each is of the richest gold or orange yellow surrounded by a zone of the darkest and blackest of vegetable greens. The fruit from which these seeds were obtained was rather small, weighing only about 2 pounds, with a major diameter of 6½ inches and a minor of 4½ inches. The fruit has all the sweetness, dryness, and chestnut-like flavor of the best strains of the *Winter Hubbard* squash. Externally the skin is smooth, the central zone being of a dark rich green, on each side of which is an orange-yellow cap. It looks more like a striking fancy gourd than a squash. The owner of the vine from which I obtained the single fruit claimed that no one else owned a similar plant, as he had always refused to sell mature fruits or seeds. From the appearance of the vine I believe that it is a shy bearer, which does not lessen the value of the plant as an ornamental of a very unusual character." (*Lyon.*)

23495. EUCALYPTUS MICROTHECA F. Muell. **Coolibah.**

From Sydney, New South Wales, Australia. Procured from Mr. J. H. Maiden, director and government botanist, Botanic Gardens. Received September 8, 1908.

"Widely dispersed over the most arid extratropical as well as tropical inland regions of Australia. The 'coolibah' of the aborigines, according to the Rev. Dr. Woolls. The tree wants ferruginous-gravelly soil, perfectly drained. Withstands unscorched a frequent heat of 156° F. in Central Australia, yet was not affected by exceptionally severe frosts (18° F.) in the south of France when many other eucalypts suffered. The development of this species in southern France and Algeria has been marvelously quick. [Prof. Naudin.] One of the best trees for desert tracts; in favorable places 150 feet high. Wood brown, sometimes very dark, hard, heavy, and elastic; it is prettily marked, hence used for cabinetwork, but more particularly for piles, bridges, and railway sleepers. [Rev. Dr. Woolls.]" (*Von Mueller.*)

"This seed was introduced partly for raising trees for honey in California." (*Young.*)

23496 to 23518.

From Yokohama, Japan. Presented by the Yokohama Nursery Company. Received August 14, 1908.

The following seeds from the Jingpoo Chrysanthemum Garden. Japanese names quoted:

23496 to 23502. CHRYSANTHEMUM STIPULACEUM (Moench) W. F. Wight.

23496. "*Shiro-mame.*"

23497. "*Kangiku.*"

23498. Best pink.

23499. "*Kyo-miyage.*"
Pink.

23500. "*Nure-garasu.*"
Pink.

23501. "*Murasaki-no-kuruimono.*"
Purple.

23502. "*Oritaki-shiba.*"
Purple.

23503. ASTER sp. (?)
Purple.

23504 to 23518. CHRYSANTHEMUM STIPULACEUM (Moench) W. F. Wight.

23504. "*Hano-no-seki.*"
Purple.

23505. "*Shukokin.*"
Red.

23506. "*Uji-no-sato.*"
Red.

23507. "*Bushi-no-kagami.*"
Red.

23508. "*Date-musume.*'
Red.

23509. "*Okino-kaza.*"
White.

23510. "*Fuki-no-yama.*"
White.

23511. "*Okina-no-tomo.*"
White.

23512. "*Matsu-no-yuki.*"
White.

23513. "*Gano-no-yuki.*"
White.

23514. "*Hakuhoshu.*"
White.

23515. "*Jitsugetsu.*"
White and purple mixed.

23516. Yellow.

23517. "*Kin-kujiyaku.*"
Yellow.

23518. "*Azami.*"
Yellow.

23519 and 23520. GARCINIA spp.

From Buitenzorg, Java. Presented by Dr. M. Treub. Received September 4, 1908.

23519. GARCINIA BENTHAMI Pierre.

"This species is very widely distributed in all the provinces of lower Cochin China and Cambodge.

"Branches opposite, tetragonal, very long. Leaves petiolate. The flowers are terminal at the summit of a short shoot more or less surrounded with bracts. They are solitary in the female plant. The petals are broader and thicker than the sepals and are yellowish. In the female flowers the stamens are completely lacking and the gynaeceum has the form of a pear. The fruit retains the form of the pistil. It contains 5 to 10 seeds having the form of a crescent.

"The tree is 20 to 25 meters high, of pyramidal form. Trunk straight, 45 to 50 centimeters thick, covered with a blackish bark, rough exteriorly, filled interiorly with a white juice, present in all parts of the plant and becoming black on exposure to light.

23519 and 23520—Continued.

"The wood of *G. benthami* is reddish brown and very much esteemed. It is used for the same purposes as that of *G. ferrea* and differs from it very little. If we consider what Rumphius says about that of *G. celebica* L., we may regard it as established that all the Garcinias with a white juice have reddish brown or honey-colored wood superior to that of the other species of Garcinia. This observation is important for forest cultivation." (*Extract from Pierre's Forest Flora of Cochin China.*)

23520. GARCINIA CELEBICA L.

"This tree grows very quickly and without difficulty. The leaves have an acid flavor; the fruits remain acid a long time; their taste when they are perfectly ripe is somewhat like that of the cultivated mangosteens. An excellent jelly is made of them and a refreshing pectoral sirup which Lamarck says is in daily use at Mahé. Its fruits are used in dyeing, and their rind has astringent properties and serves to make vinegar. A viscid, milky, yellowish juice runs from incisions made in the tree, which gives a species of gum. This mangosteen grows naturally in the East Indies and is also found in the island of Bourbon and in several of the Antilles.

"It is not a very tall tree and has a large tufted top. The branches are glabrous, a little striate, slightly tetragonal, and covered with a grayish or dull red bark. The leaves are opposite, numerous, oval-lanceolate, pointed at the two ends, glabrous, green on both sides, much narrower and less thick than those of the cultivated mangosteen. The flowers are unisexual and borne on different plants. The female flowers are terminal, solitary, hardy pedunculated. The fruit is globular, of a yellowish red or saffron color, sometimes violet, crowned by the stigma; it is a little bit larger than the 'pomme d'api,' which it resembles in form.

"The yellow juice which comes from incisions in this mangosteen gives a kind of aromatic resin, sought after for medicinal purposes. The fruit furnishes a balsamic acid, and the bark tannin." (*Extract from the Medical Flora of the Antilles, by Descourtilz.*)

"These two species of Garcinia were introduced for testing as stocks on which to grow the mangosteen, which is notably one of the weakest rooted plants of this genus." (*Fairchild.*)

23522 to 23525.

From Chungking, west China. Presented by Rev. J. F. Peat. Received August 24, 1908.

Seed of each of the following. Varietal descriptions by Mr. H. T. Nielsen.

23522. GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

Greenish yellow with dark hilum.

23523. GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

Black. Similar in appearance to No. 19183.

23524. VIGNA SESQUIPEDALIS (L.) W. F. Wight.

Red.

23525. PISUM ARVENSE L. **Field pea.**

23526. GOSSYPIUM HIRSUTUM L. **Cotton.**

From Carácas, Venezuela. Presented by Dr. E. André, Port of Spain, Trinidad, British West Indies. Received August 28, 1908.

"A curious variety." (*André.*)

"Lint medium short staple length, drag very fine, of great strength. Probably a tropical cotton adapted to only tropical regions." (*D. N. Shoemaker.*)

23527. MUSA PARADISIACA L. **Banana.**

From Ambos, Camarines, P. I. Presented by Mr. William S. Lyon, Manila, P. I. Received September 8, 1908.

"Seed of an edible species. The fruit is large and well flavored and the farinaceous seeds are quite tender and eaten, not rejected, when the fruit is ripe. They do not harden until the fruit begins to decay. It is one of our many

23527—Continued.

varieties, and I can give you no specific or even local name other than 'sagin,' but as sagin is Tagalog in general for banana, it does not amount to much." (*Lyon.*)

23528. FICUS CARICA L. **Fig.**

From Nodoa, island of Hainan, China. Presented by Mrs. J. F. Kelly, Hoihow, island of Hainan. Received September 8, 1908.

Seeds of a Chinese fig.

"Color when ripe dark red. Grows beside running water. Figs grow on trunk of tree near base. Fruit is cool and delicious. Diameter as much as 3⅞ inches; outside pulp 1 inch thick and a large ball of white custard in the center surrounded by seeds." (*Kelly.*)

23529 and 23530. ACACIA spp.

From Chico, Cal. Procured by Mr. W. W. Tracy, jr., in charge of Plant Introduction Garden. Received September 3, 1908.

Seed of each of the following:

23529. ACACIA LONGIFOLIA (Andr.) Willd.

Seeds from tree on Mr. Bidwell's place at Chico, Cal. For trial at Brownsville, Tex.

"A bushy Acacia useful in Australia for binding coast sands through the facility with which the lower branches throw down roots into the soil. The bark, while not so high in tannin as that of *Acacia mollissima*, is used chiefly in tanning sheep skins." (*Extract from von Mueller.*)

23530. ACACIA MOLLISSIMA Willd.

Seed procured from trees thriving in the streets of Chico, Cal. To be tested in the open at Brownsville, Tex.

"The black wattle of southeastern Australia and Tasmania. An Acacia thriving on the poorest soil and producing a bark so high in tannin as to render its cultivation very profitable, especially in Natal, where large plantations have been established on the rolling uplands; as a tan producer it is by far the most valuable of the Acacias, and the bark is especially valuable for tanning sole leather and heavy goods." (*Extract from von Mueller.*)

23531 to 23534. RUBUS spp.

From Mokanshan, China. Presented by Rev. J. M. W. Farnham, Shanghai, China. Received September 5, 1908.

Seed of each of the following:

23531 and 23532.

"These grow on the stem like the blackberry and have no core like the raspberry. They are both red, with a pleasant acid flavor, and might become fruitful and useful if cultivated in a proper location, or they may be useful in hybridizing experiments." (*Farnham.*)

23533.

"I found these growing wild and noticed that they resembled what I remember seeing in New England and heard called 'English black raspberry.' I transplanted some to the garden, but was told that they did not bear fruit. However, I persevered in cultivating them and they commenced bearing, and the berries have improved in size and quality until this year. Many of them were of good size and flavor." (*Farnham.*)

23534.

"These seeds are from a bush I am cultivating that I found growing wild here on the mountain 2,000 feet above the sea. It resembles the raspberry in that the lobes of the berry are arranged around a core, or center, but the vine is more like the blackberry, though the leaves are very light on the under side, almost white, like the raspberry. The lobes are slightly acid and red. They are very few at present, but I hope will increase in number with cultivation." (*Farnham.*)

23535. INDIGOFERA GLANDULOSA Wendl. **Befri.**

From Baroda, India. Procured by Mr. William H. Michael, American consul-general, Calcutta, India, through Lieut. Col. M. J. Meade, C. I. E., superintendent, Baroda Presidency. Received September 4, 1908.

"The befri plant is an annual and belongs to the natural order Leguminosæ. It generally grows in black soil, and does not require much water. Befri is contained in very small pods, which are gathered after the rainy season is over.

"Befri contains 21.13 per cent of albuminoids, whereas their proportions in Indian wheat and oatmeal are, respectively, 13.50 and 16 per cent. In other words, befri is 56 per cent more nutritious than wheat and 32 per cent more so than oatmeal. It is ground, mixed with flour of bajri or other less nutritious grains or grass seeds, and made into bread, bhedki, etc." (*Shamsudin J. Sulemani, chief medical officer of Baroda State.*)

23536. CANARIUM LUZONICUM (Blume) Gray. **Pili nut.**

From Tayabas Province, P. I. Presented by Mr. William S. Lyon, Manila, P. I. Received September 8, 1908.

"I sent some of these nuts to a New York fruit seller some five years ago, and in his opinion they rivaled the famous Brazil nut (*Bertholetia*) as a dessert nut. He, however, expressed an adverse opinion of their ever having any commercial value as dessert nuts, owing to the hard shell resisting any ordinary hand nutcracker.

"In a lot I picked up in Tayabas I found two or three which, though far from having paper shells, were amenable to my heel on a board floor. I thought the matter worth looking up, and ascertained that they came from the neighborhood, and spent a few days collecting fruits from all the fruiting trees in the vicinity. Although I made no 'find,' I send on the fresh collected seeds for you to grow as stock in case I am able to secure later scions of the paper-shell variety." (*Lyon.*) (See No. 21860 for previous importation.)

23542. CUCUMIS MELO L. **Muskmelon.**

From Paris, France. Presented by Mr. W. W. Keen, 1729 Chestnut street, Philadelphia, Pa. Received August 26, 1908.

"Seed of melons now so abundant here (Paris). They are much larger than our cantaloupe and of quite as fine a flavor, if not even better. The interior is a beautiful reddish yellow." (*Keen.*)

"This is probably one of the varieties of the large Persian melons which do not thrive in this region (Washington, D. C.), but do much better in the hot, dry climate of Colorado and westward." (*W. W. Tracy, sr.*)

23543. PHASEOLUS VULGARIS L. **Bean.**

From Helsingfors, Finland. Presented by Mr. V. F. Sagulin. Received September 10, 1908.

Finnish runner bean.

23544 to 23547.

From Ningyuenfu, Szechuan, via Chengtu, China. Presented by Rev. R. Wellwood, American Baptist Mission. Received September 10, 1908.

Seed of each of the following. Varietal descriptions by Mr. H. T. Nielsen.

23544 to 23546. GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

23544. Large yellow with dark hilum; similar in appearance to Nos. 19986 and 22877.

23545. Yellow with brown hilum; similar in appearance to No. 17862.

23546. Very small, black, smaller than any black-seeded soy bean we have had.

23547. PISUM ARVENSE L. **Field pea.**

23548. PSIDIUM GUAJAVA L. **Guava.**

From Bradentown, Fla. Presented by Mr. W. A. Berg, through Mr. Walter Fischer. Received September 16, 1908.

"Seed of the largest and finest fruit that I have yet seen. Weight, from 7 to 10 ounces; color of outside skin, green; when ripe the flesh is cream colored; fruit has a slight banana flavor and is late in ripening, coming in when others have gone. Flesh one-half inch thick. Seeds from 75 to 175 in number, bunched." (*Berg.*)

23549. ARACHIS HYPOGEA L. **Peanut.**

From Cochin China. Presented by Mr. J. E. Conner, American consul, Saigon, Cochin China. Received August 28, 1908.

"These are very small, very abundant as to the number of seeds, but about equal in weight to the yield of the Javanese peanut (about 1,700 pounds to the acre). Because of the smallness of the seed the officials at the Jardin Botanique hadn't any good words for it. I tried to discover whether they were bunched together more closely at the root of the plant, but without success. They are planted in rows, distanced 40 cm., the rows 50 cm. apart, in soil sandy, moist, and rich in nitrogen though poor in phosphoric acid, potassium, and lime." (*Conner.*)

23551 to 23623. SOLANUM TUBEROSUM L. **Potato.**

From Chile. Procured from Mr. José D. Husbands, Limavida, Chile, through Mr. Alfred A. Winslow, American consul, Valparaiso, Chile. Received at the Mississippi Valley Plant Introduction Garden, Ames, Iowa, August, 1908.

The following tubers. Descriptive notes by Prof. S. A. Beach, Mississippi Valley Plant Introduction Garden.

23551 to 23577.

"Each of these is a wild variety or class of its own, sent as found growing in the virgin bush on the hills, mountain sides, and lowlands on the island of the archipelagos de Chiloé and Guaitecas. They form the sole food of the Chilote Indians and other native inhabitants. These tubers grow abundantly in spots, often very deep in the ground or gravel. Many grow from self-sown, grown, and planted seedlings. These preserve their character and improve, increase in size, and also perfect their forms for five consecutive years, when they become established sorts. Thousands have to be dug to make small collections of new kinds. Often when a little tuber is found it must wait many days for its companion to be found far away. Generally all these improve with continued cultivation. They are all good eating, especially baked; some when boiled are inclined to dissolve, but with continued planting they outgrow this fault. A collection of seedlings is more effective to work on than sowing seeds, which grow in every direction but the desired, and frequently strike back to the worthless wild sorts." (*Husbands.*)

23551. Dark purple, elongated, irregular. Flesh dark in center, with purple line about darker portion.

23552. Red, elongated, irregular.

23553. Purple, round, flattened, regular.

23554. Purple, elongated, irregular.

23555. Dark purple, round or elongated, irregular. Flesh yellow.

23556. White, purple eyes and eyebrows, elongated.

23557. White, round or elongated, irregular.

23558. White, roundish but very irregular in shape, slightly flattened.

23559. Pink, elongated, irregular. Flesh contains a distinct line about half way from center to circumference.

23551 to 23623—Continued.

23551 to 23577—Continued.

23560. White, round. Flesh deep yellow.

23561. Red, elongated, irregular.

23562. Red, oblong, irregular.

23563. Pink, elongated, regular.

23564. Purple, round, one specimen knobby, regular.

23565. White around eyes, balance purple, round, flattened, regular.

23566. Purple, round, regular.

23567. White, round, regular.

23568. White, round, regular.

23569. White, elongated, regular.

23570. White, round, regular in size, irregular in shape.

23571. Purple, elongated or round, irregular.

23572. White, blotched with pink, round, irregular.

23573. Dark, mottled with purple, round, irregular.

23574. White, oblong, very irregular and knobby.

23575. White, round, regular.

23576. White, round, regular. Flesh deep yellow.

23577. White, elongated, flattened.

23578 to 23623.

"The following represent varieties of good potatoes of wild origin from the archipelago before named. There are no duplicates; if they are alike, they came from distant parts and were grown under such distinct conditions as to location, soil, moisture, plant food, etc., as to entitle them to new classification. The smallest that were suitable for seed were collected for economy of space, which is very limited when collecting tours are made on horseback. There are all sorts—white, yellow, pink, etc., fleshed. The yellow, and some white ones, are inclined to sweetness and are of extra fine flavor. If they retain their native merits when planted in such a distant home, you will get almost any result you seek. I have, however, proved to my satisfaction that extreme changes in localities and conditions influence and alter flavor, size, and shape. Many improve, others deteriorate. The red-skinned classes sent are bad forms, but are very fine sorts to eat. Their names are of no value, as they are local Chilote Indian names; often the same potato has a different name in every locality where grown. Some of these are seedlings of the second and third years' growth. These will improve in shape, size, and flavor by planting; at least they would do so if planted in Chile. Long cultivation has made the others standard sorts, which hold their own (in Chile) with indefinite continued sowing. It will be strange if some of these will not have an affinity with your conditions. Among these you will find some extra early, others late, mostly medium early; some with a very small plant growth, others rank. While all the flowers are true Solanum, they are of many different sorts and colors. Some roots spread largely and yield on new growth also; others stay in their proper places. Generally speaking, all are very productive and yield from 40 to 120 for one; 60 per plant would be a safe average. Another feature is their uniformity in size and shape. All these have grown dry in short summers; that is, with natural earth moisture and the extra heavy marine dews. I do not believe such tubers have ever been tested so far inland as Iowa. That they will reproduce themselves I have little hope. In my opinion they will be much better or worse; as likely to be one as the other. From experiments I have made in Chile, this is foretold. No one knows results, as no one has ever attempted such experiments as you will make, i. e., from seaward to such a far distance inland. I have gained better results from inland to seaward. If you were to send me potatoes from Iowa and ask me to plant

23551 to 23623—Continued.

23578 to 23623—Continued.

them in Chile and afterwards return the product, I do not believe you would recognize them in any particular. I write these things for information, and not as instruction. Very many of these potatoes do not rot if left in the ground through a winter of five months' continued rain. They must be on an inclined surface for drainage of the rain." (*Husbands.*)

23578. Light purple, round, regular.

23579. White, russeted, elongated, flattened.

23580. Red, round, irregular. Flesh with indistinct red line about outside ¼ inch from circumference. Flesh is streaked with red.

23581. White, russeted, slightly elongated and flattened.

23582. Faint purple, coarsely russeted, round, regular.

23583. White, dumb-bell shaped, irregular.

23584. White, elongated, flattened, regular.

23585. White, round, regular.

23586. White, elongated, flattened.

23587. Pink, elongated, flattened, irregular. Flesh deep yellow.

23588. White or red, mottled with purple, round, irregular.

23589. White, elongated, irregular.

23590. Dull red, elongated, flattened, regular.

23591. Red, slightly flattened, and oblong.

23592. Light red, round or elongated, irregular in shape and size. Mottled flesh. Much like water core in apples.

23593. White, round, irregular. Flesh contains yellow streaks.

23594. Purple, round, irregular, knobby.

23595. White, round or elongated, flattened, irregular.

23596. White, blotched with purple, round, irregular.

23597. Purple, slightly elongated, and flattened.

23598. White, some specimens russeted, irregular, slightly elongated. Flesh deep yellow.

23599. White, elongated, regular.

23600. Round, white, regular.

23601. Round, slightly flattened, irregular, white. Flesh yellow.

23602. White, elongated, regular.

23603. White, round, flattened, irregular.

23604. Red; several specimens round, the others oblong.

23605. White, pink around eyes, slightly elongated.

23606. White, elongated, irregular.

23607. Dull purple, round or elongated, flattened, irregular.

23608. White, elongated, regular. Flesh white. (Type A of Husbands.) White, round, irregular. Flesh deep yellow. (Type B of Husbands.)

23609. White, round, flattened, regular.

23610. White, round.

23611. White, russeted in patches, elongated, flattened, regular.

23612. Round.

23613. Red, elongated, flattened, regular. Flesh yellow.

23551 to 23623—Continued.

23578 to 23623—Continued.

23614. Purple with white around eyes, round, irregular. Flesh yellow, marked with red.

23615. White, elongated, irregular, uniform.

23616. Red, round, flattened, regular. Flesh streaked with red.

23617. White with pink eyes, elongated, irregular.

23618. Dull red, coarsely mottled in small patches, elongated, and flattened.

23619. Red, elongated, flattened, irregular. Flesh, deep yellow.

23620. White, elongated, irregular.

23621. Dull red, elongated, irregular.

23622. White, round or elongated, flattened, irregular.

23623. Red, elongated, knobby, irregular.

23625 to 23627.

From Orenburg, Russia. Presented by Mr. W. S. Bogdan, agronomist. Received September 8, 1908.

The following seeds:

23625. Medicago falcata L.

23626. Lathyrus tuberosus L.

23627. Glycyrrhiza glabra L.

23631. Colchicum autumnale L. Colchicum.

From Baumschulenweg, near Berlin, Germany. Purchased from Mr. L. Späth, for Doctor True's experiments. Received September 17, 1908.

See No. 23436 for description.

23632 to 23643. Musa spp. Banana.

From Ceylon. Procured by Dr. C. Drieberg, secretary, Ceylon Agricultural Society, Colombo, Ceylon, at the request of Mr. O. W. Barrett. Received September 4, 1908.

The following suckers:

23632. *Hambanpuwalu.*

23633. *Suramondan.*

23634. *Sudu Puwalu.*

23635. *Marthawalu.*

23636. *Kalu Rata Hondarawala.*

23637. *Suwadel.*

23638. *Kolikuttu.*

23639. *Rata Hondarawala.*

23640. *Maha Alumondan.*

23641. *Puspakedeli.*

23642. *Dalena.*

23643. *Alumondan.*

"S. P. I. Nos. 23632 to 23641 and 23643 are varieties indigenous to Ceylon, while S. P. I. No. 23642 is a variety imported from Queensland some time since, but is by no means an improvement on the Ceylon varieties. Varieties S. P. I. Nos. 23637 and 23638 are generally considered the best." (*Drieberg.*)

23644. Coelococcus amicarum (Wendl.) W. F. Wight. Caroline ivory-nut palm.

From Philippine Islands. Presented by Mr. William S. Lyon, Gardens of Nagtajan, Manila, P. I. Received September 21, 1908.

See No. 21044 for description.

23645. Viola calcarata L.

From Kew, England. Presented by Mr. David Prain, director, Royal Botanic Gardens. Received September 21, 1908.

"Introduced for the purpose of hybridizing with the common pansy to produce an improved pansy that will withstand hot summer weather." (*Oliver.*)

23646 and 23647. CERATONIA SILIQUA L. **Carob.**

From Lisbon, Portugal. Secured by Mr. Louis H. Aymé, American consul-general. Received September 21, 1908.

Cuttings of each of the following. The name of the plantation, proprietor, and the average annual production of the tree from which the grafts were cut are given.

23646. From Chão das Donas, plantation of Antonio José da Motta; yield 35 to 40 pounds per annum.

23647. From Valle de Arrencada, plantation of Joaquin Traquino; yield 15 to 20 pounds per annum.

These cuttings were procured to take the place of similar ones received in 1907 and listed under Nos. 20962 and 20963, but which died.

23650. SOLANUM MURICATUM Ait. **Pepino.**

From Teneriffe, Canary Islands. Presented by Mr. Solomon Berliner, American consul, through the Department of State. Received September 21, 1908.

"Cuttings of a fruit known here as 'pera melon,' or melon pear. This fruit grows on bushes about 2 or 3 feet high and when ripe is yellow and the shape of a melon: in taste it is a blend between a cantaloupe and a pear." (*Berliner.*) (See No. 21546 for other importations of above.)

23656. ROSA MOYESI Hort. **Rose.**

From London, England. Purchased from James Veitch & Sons. Received September 23, 1908.

"A very distinct Chinese species of dense habit and with very spiny growths and leaves. The latter have in most cases nine or eleven pinnæ and they are very deep green. The flowers are nearly 3 inches across, rounded, single, and made up of very thick, substantial petals. The color is deep, rich, rosy red, but the buds are of brighter hue. This new rose should prove of great value in the creation of a new race of garden roses." (*James Veitch & Sons.*)

23658. CITRUS TRIFOLIATA L.

From Santa Ines, Chile. Purchased from Mr. S. Izquierdo, through Mr. W. T. Swingle. Received September 25, 1908.

"I cultivated this species here and it is the stock which I use for grafting the citrus varieties producing fruits for the trade." (*Izquierdo.*)

23659. MEDICAGO SATIVA L. **Alfalfa.**

From Lindsborg, Kans. Presented by Mr. Carl Wheeler, through Mr. J. M. Westgate. Received September 25, 1908.

Hungarian. "Said to be a part of a heavy shipment from Hungary to South America, but which could not be marketed in South America owing to financial stringency; several carload lots were sold to Kansas seed houses under the name of *Hungarian* alfalfa. Said to be a very hardy variety. To be grown for comparison and identification." (*Westgate.*)

23660. PHALARIS COERULESCENS Desf.

From Paris, France. Purchased from Vilmorin-Andrieux & Co. Received September 25, 1908.

See No. 22961 for description.

23662 to 23710. ERIOBOTRYA JAPONICA (Thunb.) Lindl. **Loquat.**

Reciprocal loquat crosses, raised at the Department greenhouses by Mr. G. W. Oliver, plant propagator. Numbered for convenience in recording distribution September, 1908.

23662 to 23710—Continued.

Plants of each of the following:

23662 to 23683.

Olivier × *Tanaka.*

23684 to 23710.

Tanaka × *Olivier.*

The above crosses were made between *Olivier*, S. P. I. No. 6457, and *Tanaka*, S. P. I. No. 8890.

23711. Citrullus vulgaris Schrad.

From Egypt. Presented by Mr. Hubert S. Smiley, Gallowhill, Paisley, Scotland. Received September 23, 1908.

"Seeds of the 'Boutique el Zeit,' commonly known as the 'unedible watermelon.' This comes from south of the Bahr el Ghael and round the port of Rumhek. The natives grow it after the rains and extract the seeds and boil them. The result is an oily film on top of the water. This is removed and the process continued until an oil is procured which is said to be very good for lighting purposes. Perhaps this plant would be of service to people in out-of-the-way parts of your country. The melon is unedible." (*Smiley.*)

23712. Festuca rubra dumentorum (L.) Hackel.

Chewing's fescue.

From Wellington, New Zealand. Presented by Mr. T. W. Kirk, biologist, Department of Agriculture, through Mr. C. V. Piper. Received September 28, 1908.

23713. Eucalyptus microtheca F. Muell.

From Australia. Presented by Mr. W. R. Guilfoyle, director, Botanic and Domain Gardens, Melbourne, who procured it from J. Staer & Co., seedsmen, etc., Wahroonga, New South Wales. Received September 29, 1908.

See No. 23495 for description.

23714 to 23733.

From East Africa. Received through Mr. O. W. Barrett, Director of Agriculture, Lourenco Marquez, Portuguese East Africa, September 21, 1908.

The following seeds:

23714. Andropogon sorghum (L.) Brot.

"(No. 1.) 'A sweet sorghum' in cultivation by the M'chopes Kafirs of Zavala section of Inharrime district. Height, 2.5 to 3.5 meters. Crop (second) in July." (*Barrett.*)

"Hackel's variety *roxburghii*. A 14-inch panicle, loose and open, with very slender branches. Type of the Madagascar ampembies. Glumes rather broad, reddish, hairy, becoming involute and gaping at maturity. Seeds broadly oval, pearly white." (*Carleton R. Ball.*)

23715. Andropogon sorghum (L.) Brot.

"(No. 2.) A goose-neck variety in common cultivation by Kafirs in Gazaland. The best of about 6 more or less distinct sorts. Height, 3 to 6 meters. Prefers heavy alluvial soil. Native name (usually) *mapira*." (*Barrett.*)

"Fragments of the head of a white-seeded sorghum probably similar to the preceding (S. P. I. No. 23715). Glumes shorter and firmer, but involute and gaping. Seeds nearly circular." (*Carleton R. Ball.*)

23716. Andropogon sorghum (L.) Brot.

"(No. 3.) A straight blackhull variety in cultivation by natives of lower Zambezi Valley. Height 3 to 4 meters." (*Barrett.*)

23714 to 23733—Continued.

"Variety *roxburghii* Hackel. A 14-inch head, typical, branches extremely slender, glumes narrowly ovate to lanceolate, acuminate, deep mahogany red, involute and gaping at maturity. Seeds white, oval, subacute, very similar to *shallu*." (*Carleton R. Ball.*)

23717. VERNONIA sp. (?)

"(No. 4.) Rambling shrub common in Gaza and Inharrime districts. Flowers fragrant, numerous, of unstable colors (white to bluish or rose). Ornamental. Height 5 to 10 meters." (*Barrett.*)

23718. CANAVALI OBTUSIFOLIUM (Lam.) DC.

"(No. 5.) A wild vine in open 'bush' between Chai-Chai and Inhambane. Length 4 to 8 meters." (*Barrett.*)

23719. CANAVALI OBTUSIFOLIUM (Lam.) DC.

"(No. 6.) A wild vine in 'bush' and along river banks in lower Zambezi Valley. Length 4 to 10 meters." (*Barrett.*)

23720. VIGNA UNGUICULATA (L.) Walp. Cowpea.

"(No. 7.) A 'Kafir bean' in cultivation in the province of Inhambane. Rare." (*Barrett.*)

23721. VIGNA UNGUICULATA (L.) Walp. Cowpea.

"(No. 8.) A very common 'Kafir bean' in Portuguese East Africa. A smaller form is not so common. Sandy soil preferred. Yield in fair soil, 5 bags (80 kilos each?) per hectare." (*Barrett.*)

23722. ELEUSINE CORACANA (L.) Gaertn. Ragi millet.

"(No. 9.) A common crop in the lower Zambezi Valley. Prefers heavy alluvial soil. Height 1½ to 2 feet. Local name *naxenim;* Ichuabo name *merúbi*." (*Barrett.*)

23723. ASTRAGALUS PROLIXUS Sieber.

"(No. 10.) An erect, much-branched leguminous herb in open veld in lower Zambezi Valley. Height about 1 meter." (*Barrett.*)

23724. INDIGOFERA sp. (?)

"(No. 11.) A wild woody herb of the open veld in the lower Zambezi Valley. Height 1 to 1½ meters." (*Barrett.*)

23725. CROTALARIA PODOCARPA DC.

"(No. 12.) A wild woody herb of the open veld in the lower Zambezi Valley. Height ½ to 1 meter." (*Barrett.*)

23726. INDIGOFERA HIRSUTA L.

"(No. 13.) A woody herb of the open 'bush' and alluvial plains of Gaza and Inhambane. Height 1 meter." (*Barrett.*)

23727. INDIGOFERA sp. (?)

"(No. 14.) A creeping leguminous herb in sandy soils in Limpopo Valley (Gaza). A possible cover crop in sandy regions." (*Barrett.*)

23728. GOSSYPIUM sp. (?) Cotton.

"(No. 16.) A dwarf wild cotton of the open veld in scattered districts of Portuguese East Africa. Height about ½ to 1 meter. Prolific." (*Barrett.*)

23729. SPATHODEA sp. (?)

"(No. 17.) *'Ngain.* A close-branched evergreen tree of the 'bush' in Gaza. Suitable for a wind belt. Flowers rather large, whitish." (*Barrett.*)

23730. VIGNA sp. (?)

"(No. 18.) A leguminous vine of the 'bush' and veld. Length, 4 to 8 meters." (*Barrett.*)

23731. TELFAIREA PEDATA (Smith) Hook.

"(No. 19.) A gigantic cucurbit apparently wild in the 'bush' of Inhambane. Dicœcious. Plants live two or three years and attain a

23714 to 23733—Continued.

diameter at the base of some 6 inches (47 centimeters in circumference). Seeds numerous in large (12 to 18 inches in diameter) fruit. Oil of good quality; kernels said to contain 60 per cent. Planted as a new oil crop." (*Barrett.*)

23732. SOPHORA TOMENTOSA L.

"(No. 20.) A gray-leaved shrub or small tree growing in sand in the coast region of the Mozambique Company's territory. Suitable for a wind hedge in Florida." (*Barrett.*)

23733. MUCUNA sp.

"(No. 21.) Seeds found on bank of Chinde River (the north mouth of the Zambezi)." (*Barrett.*)

23734 to 23739.

From Sibpur, Calcutta, India. Presented by Mr. W. W. Smith, acting superintendent, Royal Botanic Garden. Received August 21, 1908.

The following seeds:

23734. TAMARINDUS INDICA L. **Tamarind.**

Sweet.

23735. CAJAN INDICUM Spreng.

"May help us where grown in cotton fields to enrich the soil; better than cowpeas." (*H. E. Van Deman.*)

23736 to 23739. MANGIFERA INDICA L. **Mango.**

23736. *Copalbhog.* (See No. 10640 for previous introduction.)

23737. *Khirsapati.*

23738. *Malda.* (See No. 9808 for previous introduction.)

23739. *Kissenbhog.*

23740 to 23744.

From Wellington, New Zealand. Presented by Mr. T. W. Kirk, biologist, Department of Agriculture. Received September 30, 1908.

The following seeds. Native names in quotations.

23740. DYSOXYLUM SPECTABILE (Forst.) Hook.

Kohekohe. "A handsome round-headed tree 25 to 50 feet high, 1 to 3 feet in diameter; flowers waxy white.

"Timber suitable for inlaying and furniture; leaves bitter and tonic." (*Extract from Cheeseman's Man. N. Zeal. Fl.*)

23741. SOPHORA TETRAPTERA J. Mill.

Kowhai. "A small tree with exceedingly hard and durable wood, which can be used for cog wheels and other select structures. Trunk exceptionally attaining a diameter of 3 feet. The wood differs much from that of *S. tomairo* of the Easter Islands [Dr. Phillippi]." (*Von Mueller.*)

23742. NAGEIA EXCELSA (D. Don) Kuntze. (PODOCARPUS DACRYDIOIDES A. Rich.).

White pine, or *Kahikates.* "One of the tallest trees of the colony; said to occasionally attain the height of 150 feet. The wood is white or pale yellow, tough and compact, straight grained and easily worked, but unfortunately not durable when in contact with the ground or where regularly exposed to dampness. It is very suitable for inside work of all kinds." (*T. F. Cheeseman, Fl. N. Zealand.*)

23743. MYRSINE URVILLEI A. DC.

"*Te Pau.*" "This is a small closely branched tree, 10 to 20 feet high; bark red on the young branches. The leaves are alternate, oblong, nearly smooth, margins undulate. The flowers are crowded in fascicles on the

23740 to 23744—Continued.

branches below the leaves; small, whitish. The ovary has a large sessile-fringed stigma. The fruits are small, round, and black.

"These characters seem to me to be of importance in an ornamental way, if the tree will stand our climate." (*H. C. Skeels.*)

23744. CLIANTHUS PUNICEUS (Don) Soland.

"This is an old-fashioned greenhouse plant, grown sometimes to cover rafters or trellis work, but more frequently trained around sticks placed around the edge of the pot. Cultivated in eastern greenhouses, and a favorite Californian outdoor shrub. Blooms all winter in Golden Gate Park, San Francisco. The flowers, not very unlike those of the common Erythrina, are freely produced in hanging clusters. Cuttings rooted in early spring may be grown into good-sized plants during the summer. Water should be given sparingly during the dull months. Pruning, repotting, and tying the shoots should be done just before the growth begins. A sharp lookout should be kept for the red spider, frequent syringings being the only remedy for this pest." (*G. W. Oliver and W. M., in Encyc. of Amer. Hort.*)

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